960GM/U3S3 FX

User Manual

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY
The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

ASRock Website: http://www.asrock.com

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1. Introduction

Thank you for purchasing ASRock ***960GM/U3S3 FX*** motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contain introduction of the motherboard and step-by-step guide to the hardware installation. Chapter 3 and 4 contain the configuration guide to BIOS setup and information of the Support CD.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest VGA cards and CPU support lists on ASRock website as well. ASRock website http://www.asrock.com
If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.
www.asrock.com/support/index.asp

1.1 Package Contents

ASRock ***960GM/U3S3 FX*** Motherboard
(Micro ATX Form Factor: 9.6-in x 7.8-in, 24.4 cm x 19.8 cm)
ASRock ***960GM/U3S3 FX*** Quick Installation Guide
ASRock ***960GM/U3S3 FX*** Support CD
2 x Serial ATA (SATA) Data Cables (Optional)
1 x I/O Panel Shield

1.2 Specifications

Platform	- Micro ATX Form Factor: 9.6-in x 7.8-in, 24.4 cm x 19.8 cm - Solid Capacitor for CPU power
CPU	- Support for Socket AM3+ processors - Support for Socket AM3 processors: AMD Phenom™ II X6 / X4 / X3 / X2 (except 920 / 940) / Athlon II X4 / X3 / X2 / Sempron processors - Supports 8-Core CPU - Supports AMD OverDrive™ with ACC feature (Advanced Clock Calibration) - AMD LIVE!™ Ready - Supports AMD's Cool 'n' Quiet™ Technology - FSB 2600 MHz (5.2 GT/s) - Supports Untied Overclocking Technology (see **CAUTION 1**) - Supports Hyper-Transport 3.0 (HT 3.0) Technology
Chipset	- Northbridge: AMD 760G - Southbridge: AMD SB710
Memory	- Dual Channel DDR3 Memory Technology (see **CAUTION 2**) - 2 x DDR3 DIMM slots - Support DDR3 1866(OC)/1600(OC)/1333/1066/800 non-ECC, un-buffered memory (see **CAUTION 3**) - Max. capacity of system memory: 16GB (see **CAUTION 4**)
Expansion Slot	- 1 x PCI Express 2.0 x16 slot (blue @ x16 mode) - 1 x PCI Express 2.0 x1 slot - 1 x PCI slot
Graphics	- Integrated AMD Radeon HD 3000 graphics - DX10 class iGPU, Pixel Shader 4.0 - Max. shared memory 512MB (see **CAUTION 5**) - Dual VGA Output: support DVI-D and D-Sub ports by independent display controllers - Supports DVI with max. resolution up to 1920x1200 @ 75Hz - Supports D-Sub with max. resolution up to 2048x1536 @ 85Hz - Supports HDCP function with DVI-D port - Supports Full HD 1080p Blu-ray (BD) / HD-DVD playback with DVI-D port
Audio	- 5.1 CH HD Audio (Realtek ALC662 Audio Codec)
LAN	- PCIE x1 Gigabit LAN 10/100/1000 Mb/s - Realtek RTL8111E - Supports Wake-On-LAN

	- Supports LAN Cable Detection - Supports Energy Efficient Ethernet 802.3az - Supports PXE
Rear Panel I/O	I/O Panel - 1 x PS/2 Mouse Port - 1 x PS/2 Keyboard Port - 1 x D-Sub Port - 1 x DVI-D Port - 4 x Ready-to-Use USB 2.0 Ports - 2 x Ready-to-Use USB 3.0 Ports - 1 x RJ-45 LAN Port with LED (ACT/LINK LED and SPEED LED) - HD Audio Jack: Line in / Front Speaker / Microphone
SATA3	- 2 x SATA3 6.0 Gb/s connectors by ASMedia ASM1061, support NCQ, AHCI and "Hot Plug" functions
USB3	- 2 x USB 3.0 ports by Etron EJ168A, support USB 1.0/2.0/3.0 up to 5Gb/s
Connector	- 4 x SATA2 3.0Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 10 and JBOD), NCQ, AHCI and “Hot Plug” functions (see **CAUTION 6**) - 2 x SATA3 6.0 Gb/s connectors - 1 x ATA133 IDE connector (supports 2 x IDE devices) - 1 x IR header - 1 x CIR header - 1 x Print port header - 1 x COM port header - CPU/Chassis/Power FAN connector - 24 pin ATX power connector - 4 pin 12V power connector - CD in header - Front panel audio connector - 2 x USB 2.0 headers (support 4 USB 2.0 ports)
BIOS Feature	- 8Mb AMI BIOS - AMI Legal BIOS - Supports “Plug and Play” - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support - CPU, VCCM, NB Voltage Multi-adjustment
Support CD	- Drivers, Utilities, AntiVirus Software (Trial Version), AMD OverDrive™ Utility, CyberLink MediaEspresso 6.5 Trial, ASRock Software Suite (CyberLink DVD Suite - OEM and Trial; ASRock MAGIX Multimedia Suite - OEM)

Unique Feature	- ASRock OC Tuner (see **CAUTION 7**) - ASRock Intelligent Energy Saver (see **CAUTION 8**) - ASRock Instant Boot - ASRock Instant Flash (see **CAUTION 9**) - ASRock OC DNA (see **CAUTION 10**) - ASRock APP Charger (see **CAUTION 11**) - ASRock SmartView (see **CAUTION 12**) - ASRock XFast USB (see **CAUTION 13**) - ASRock XFast LAN (see **CAUTION 14**) - ASRock XFast RAM (see **CAUTION 15**) - Hybrid Booster: - CPU Frequency Stepless Control (see **CAUTION 16**) - ASRock U-COP (see **CAUTION 17**) - Boot Failure Guard (B.F.G.)
Hardware Monitor	- CPU Temperature Sensing - Chassis Temperature Sensing - CPU/Chassis/Power Fan Tachometer - CPU/Chassis Quiet Fan - CPU/Chassis Fan Multi-Speed Control - Voltage Monitoring: +12V, +5V, +3.3V, Vcore
OS	- Microsoft® Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP Media Center / XP 64-bit compliant
Certifications	- FCC, CE, WHQL - ErP/EuP Ready (ErP/EuP ready power supply is required) (see **CAUTION 18**)

* For detailed product information, please visit our website: http://www.asrock.com

WARNING

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using the third-party overclocking tools. Overclocking may affect your system stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

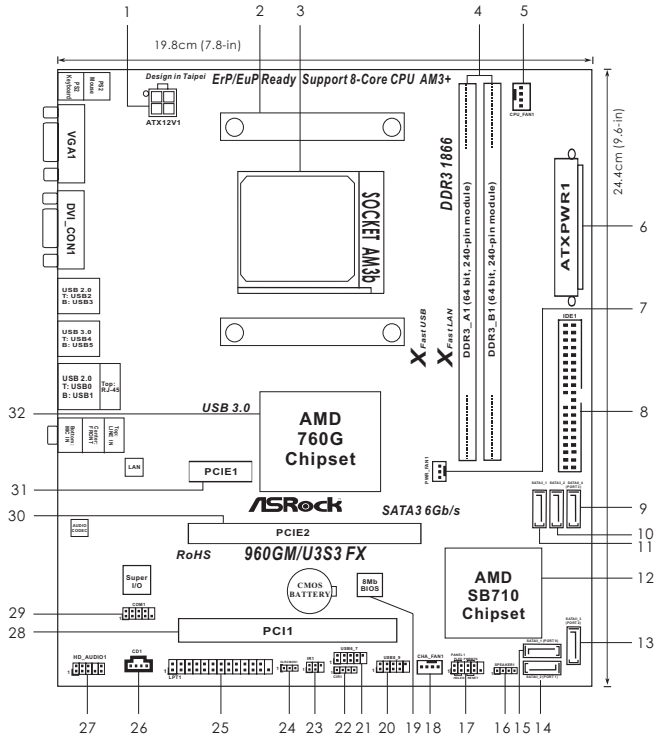
CAUTION!

1. This motherboard supports Untied Overclocking Technology. Please read "Untied Overclocking Technology" on page 36 for details.
2. This motherboard supports Dual Channel Memory Technology. Before you implement Dual Channel Memory Technology, make sure to read the installation guide of memory modules on page 16 for proper installation.
3. Whether 1866/1600MHz memory speed is supported depends on the AM3/AM3+ CPU you adopt. If you want to adopt DDR3 1866/1600 memory module on this motherboard, please refer to the memory support list on our website for the compatible memory modules.
   ASRock website http://www.asrock.com
4. Due to the operating system limitation, the actual memory size may be less than 4GB for the reservation for system usage under Windows® 7 / Vista™ / XP. For Windows® OS with 64-bit CPU, there is no such limitation.
5. The maximum shared memory size is defined by the chipset vendor and is subject to change. Please check AMD website for the latest information.
6. Before installing SATAII hard disk to SATAII connector, please read the "SATAII Hard Disk Setup Guide" on page 27 to adjust your SATAII hard disk drive to SATAII mode. You can also connect SATA hard disk to SATAII connector directly.
7. It is a user-friendly ASRock overclocking tool which allows you to surveil your system by hardware monitor function and overclock your hardware devices to get the best system performance under Windows® environment. Please visit our website for the operation procedures of ASRock OC Tuner. ASRock website: http://www.asrock.com
8. Featuring an advanced proprietary hardware and software design, Intelligent Energy Saver is a revolutionary technology that delivers unparalleled power savings. The voltage regulator can reduce the number of output phases to improve efficiency when the CPU cores are idle. In other words, it is able to provide exceptional power saving and improve power efficiency without sacrificing computing performance. To use Intelligent Energy Saver function, please enable Cool 'n' Quiet option in the BIOS setup in advance. Please visit our website for the operation procedures of Intelligent Energy Saver.
   ASRock website: http://www.asrock.com

9. ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press <F6> key during the POST or press <F2> key to BIOS setup menu to access ASRock Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.
10. The software name itself – OC DNA literally tells you what it is capable of. OC DNA, an exclusive utility developed by ASRock, provides a convenient way for the user to record the OC settings and share with others. It helps you to save your overclocking record under the operating system and simplifies the complicated recording process of overclocking settings. With OC DNA, you can save your OC settings as a profile and share with your friends! Your friends then can load the OC profile to their own system to get the same OC settings as yours! Please be noticed that the OC profile can only be shared and worked on the same motherboard.
11. If you desire a faster, less restricted way of charging your Apple devices, such as iPhone/iPod/iPad Touch, ASRock has prepared a wonderful solution for you - ASRock APP Charger. Simply installing the APP Charger driver, it makes your iPhone charged much quickly from your computer and up to 40% faster than before. ASRock APP Charger allows you to quickly charge many Apple devices simultaneously and even supports continuous charging when your PC enters into Standby mode (S1), Suspend to RAM (S3), hibernation mode (S4) or power off (S5). With APP Charger driver installed, you can easily enjoy the marvelous charging experience than ever.
    ASRock website: http://www.asrock.com/Feature/AppCharger/index.asp
12. SmartView, a new function of internet browser, is the smart start page for IE that combines your most visited web sites, your history, your Facebook friends and your real-time newsfeed into an enhanced view for a more personal Internet experience. ASRock motherboards are exclusively equipped with the SmartView utility that helps you keep in touch with friends on-the-go. To use SmartView feature, please make sure your OS version is Windows® 7 / 7 64 bit / Vista™ / Vista™ 64 bit, and your browser version is IE8.
    ASRock website: http://www.asrock.com/Feature/SmartView/index.asp
13. ASRock XFast USB can boost USB storage device performance. The performance may depend on the property of the device.

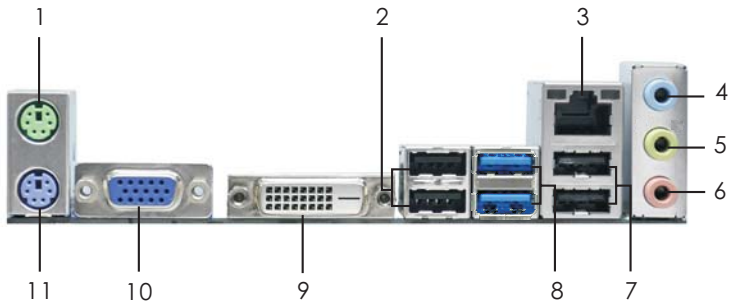
14. ASRock XFast LAN provides a faster internet access, which includes below benefits. LAN Application Prioritization: You can configure your application priority ideally and/or add new programs. Lower Latency in Game: After setting online game priority higher, it can lower the latency in game. Traffic Shaping: You can watch Youtube HD video and download files simultaneously. Real-Time Analysis of Your Data: With the status window, you can easily recognize which data streams you are currently transferring.
15. ASRock XFast RAM fully utilizes the memory space that cannot be used under Windows® OS 32-bit CPU. It also shortens the loading time of previously visited websites, making web surfing faster than ever. And it also boosts the speed of Adobe Photoshop 5 times faster. Another advantage of ASRock XFast RAM is that it reduces the frequency of accessing your SSDs or HDDs in order to extend their lifespan.
16. Although this motherboard offers stepless control, it is not recommended to perform over-clocking. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU.
17. While CPU overheat is detected, the system will automatically shutdown. Before you resume the system, please check if the CPU fan on the motherboard functions properly and unplug the power cord, then plug it back again. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
18. EuP, stands for Energy Using Product, was a provision regulated by European Union to define the power consumption for the completed system. According to EuP, the total AC power of the completed system shall be under 1.00W in off mode condition. To meet EuP standard, an EuP ready motherboard and an EuP ready power supply are required. According to Intel's suggestion, the EuP ready power supply must meet the standard of 5v standby power efficiency is higher than 50% under 100 mA current consumption. For EuP ready power supply selection, we recommend you checking with the power supply manufacturer for more details.

1.3 Motherboard Layout



1	ATX 12V Power Connector (ATX12V1)	17	System Panel Header (PANEL1, White)
2	CPU Heatsink Retention Module	18	Chassis Fan Connector (CHA_FAN1)
3	AM3+ CPU Socket	19	SPI Flash Memory (8Mb)
4	2 x 240-pin DDR3 DIMM Slots (Dual Channel: DDR3_A1, DDR3_B1; Blue)	20	USB 2.0 Header (USB8_9, Blue)
		21	USB 2.0 Header (USB6_7, Blue)
5	CPU Fan Connector (CPU_FAN1)	22	Consumer Infrared Module Header (CIR1)
6	ATX Power Connector (ATXPWR1)	23	Infrared Module Header (IR1)
7	Power Fan Connector (PWR_FAN1)	24	Clear CMOS Jumper (CLRCMOS1)
8	Primary IDE Connector (IDE1, Blue)	25	Print Port Header (LPT1, White)
9	SATA2 Connector (SATAII_4 (PORT 3), Blue)	26	Internal Audio Connector: CD1 (Black)
10	SATA3 Connector (SATA3_2, White)	27	Front Panel Audio Header (HD_AUDIO1, White)
11	SATA3 Connector (SATA3_1, White)		
12	Southbridge Controller	28	PCI Slot (PCI1)
13	SATA2 Connector (SATAII_3 (PORT 2), Blue)	29	Serial Port Connector (COM1)
14	SATA2 Connector (SATAII_2 (PORT 1), Blue)	30	PCI Express 2.0 x16 Slot (PCIE2; Blue)
15	SATA2 Connector (SATAII_1 (PORT 0), Blue)	31	PCI Express 2.0 x1 Slot (PCIE1; Blue)
16	Chassis Speaker Header (SPEAKER 1, White)	32	Northbridge Controller

1.4 I/O Panel



1	PS/2 Mouse Port (Green)	7	USB 2.0 Ports (USB01)
2	USB 2.0 Ports (USB23)	8	USB 3.0 Ports (USB45)
* 3	RJ-45 Port	9	DVI-D Port
4	Line In (Light Blue)	10	D-Sub Port
5	Line Out (Lime)	11	PS/2 Keyboard Port (Purple)
6	Microphone (Pink)		

* There are two LED next to the LAN port. Please refer to the table below for the LAN port LED indications.

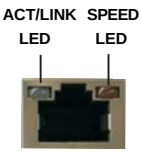
LAN Port LED Indications

Activity/Link LED

Status	Description
Off	No Activity
Blinking	Data Activity

SPEED LED

Status	Description
Off	10Mbps connection
Orange	100Mbps connection
Green	1Gbps connection



LAN Port

* To enable Multi-Streaming function, you need to connect a front panel audio cable to the front panel audio header. Please refer to below steps for the software setting of Multi-Streaming.

For Windows® XP:

After restarting your computer, you will find "Mixer" tool on your system. Please select "Mixer ToolBox" , click "Enable playback multi-streaming", and click "ok". Choose "2CH" or "4CH" and then you are allowed to select "Realtek HDA Primary output" to use Rear Speaker and Front Speaker, or select "Realtek HDA Audio 2nd output" to use front panel audio. Then reboot your system.

For Windows® 7 / Vista™:

After restarting your computer, please double-click "Realtek HD Audio Manager" on the system tray. Set "Speaker Configuration" to "Quadraphonic" or "Stereo". Click "Device advanced settings", choose "Make front and rear output devices playbacks two different audio streams simultaneously", and click "ok". Then reboot your system.

2. Installation

This is a Micro ATX form factor (9.6-in x 7.8-in, 24.4 cm x 19.8 cm) motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

Before you install or remove any component, ensure that the power is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.

1. Unplug the power cord from the wall socket before touching any component.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded anti-static pad or in the bag that comes with the component.
5. When placing screws into the screw holes to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 CPU Installation

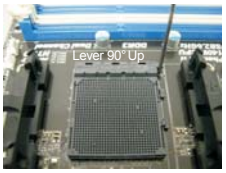
Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that the CPU corner with the golden triangle matches the socket corner with a small triangle.

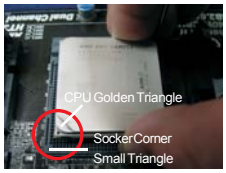
Step 3. Carefully insert the CPU into the socket until it fits in place.

The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.



STEP 1:
Lift Up The Socket Lever



STEP 2 / STEP 3:
Match The CPU Golden Triangle To The Socket Corner Small Triangle

STEP 4:
Push Down And Lock The Socket Lever

2.2 Installation of CPU Fan and Heatsink

After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other. Then connect the CPU fan to the CPU FAN connector (CPU_FAN1, see Page 12, No. 3). For proper installation, please kindly refer to the instruction manuals of the CPU fan and the heatsink.

2.3 Installation of Memory Modules (DIMM)

960GM/U3S3 FX motherboard provides two 240-pin DDR3 (Double Data Rate 3) DIMM slots, and supports Dual Channel Memory Technology. For dual channel configuration, you always need to install two **identical** (the same brand, speed, size and chip-type) memory modules in the DDR3 DIMM slots to activate Dual Channel Memory Technology. Otherwise, it will operate at single channel mode.

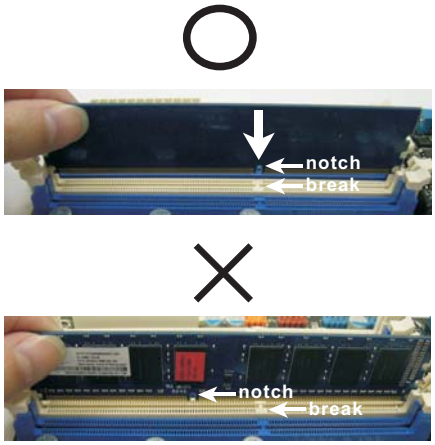
1. It is not allowed to install a DDR or DDR2 memory module into DDR3 slot;otherwise, this motherboard and DIMM may be damaged.
2. If you install only one memory module or two non-identical memory modules, it is unable to activate the Dual Channel Memory Technology.

Installing a DIMM

Please make sure to disconnect power supply before adding or removing DIMMs or the system components.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.

Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.4 Expansion Slots (PCI and PCI Express Slots)

There is 1 PCI slot and 2 PCI Express slots on this motherboard.

PCI slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface.

PCIE slots:

PCIE1 (PCIE x1 slot; White) is used for PCI Express cards with x1 lane width cards, such as Gigabit LAN card, SATA2 card, etc.

PCIE2 (PCIE x16 slot; Blue) is used for PCI Express cards with x16 lane width graphics cards.

Installing an expansion card

Step 1. Before installing the expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

Step 2. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.

Step 3. Align the card connector with the slot and press firmly until the card is completely seated on the slot.

Step 4. Fasten the card to the chassis with screws.

2.5 Dual Monitor and Surround Display Features

Dual Monitor Feature

This motherboard supports dual monitor feature. With the internal dual VGA output support (DVI-D and D-Sub), you can easily enjoy the benefits of dual monitor feature without installing any add-on VGA card to this motherboard. This motherboard also provides independent display controllers for DVI-D and D-Sub to support dual VGA output so that DVI-D and D-sub can drive same or different display contents.
To enable dual monitor feature, please follow the below steps:

1. Connect the DVI-D monitor cable to the DVI-D port on the I/O panel. And connect the D-Sub monitor cable to the D-Sub port on the I/O panel.

D-Sub port **DVI-D port**

2. If you have installed onboard VGA driver from our support CD to your system already, you can freely enjoy the benefits of dual monitor function after your system boots. If you haven't installed onboard VGA driver yet, please install onboard VGA driver from our support CD to your system and restart your computer. Then you can start to use dual monitor function on this motherboard.

When you playback HDCP-protected video from Blu-ray (BD) or HD-DVD disc, the content will be displayed only in one of the two monitors instead of both monitors.

Surround Display Feature

This motherboard supports surround display upgrade. With the internal dual VGA output support (DVI-D and D-Sub) and the external add-on PCI Express VGA card, you can easily enjoy the benefits of surround display feature.
Please refer to the following steps to set up a surround display environment:

1. Install the ATI™ PCI Express VGA card on PCIE2 slot. Please refer to page 17 for proper expansion card installation procedures for details.
2. Connect the DVI-D monitor cable to the DVI-D port on the I/O panel. And connect the D-Sub monitor cable to the D-Sub port on the I/O panel. Connect the other DVI-D monitor cable and D-Sub monitor cable to the corresponding connectors of the add-on PCI Express VGA card on PCIE2 slot.

3. Boot your system. Press <F2> or <Del> to enter BIOS setup. Enter “Share Memory” option to adjust the memory capability to [32MB], [64MB], [128MB] [256MB] or [512MB] to enable the function of D-sub. Please make sure that the value you select is less than the total capability of the system memory. If you do not adjust the BIOS setup, the default value of “Share Memory”, [Auto], will disable D-Sub function when the add-on VGA card is inserted to this motherboard.
4. Install the onboard VGA driver and the add-on PCI Express VGA card driver to your system. If you have installed the drivers already, there is no need to install them again.
5. Set up a multi-monitor display.

For Windows® XP / XP 64-bit OS:

Right click the desktop, choose “Properties”, and select the “Settings” tab so that you can adjust the parameters of the multi-monitor according to the steps below.

A. Click the “Identify” button to display a large number on each monitor.
B. Right-click the display icon in the Display Properties dialog that you wish to be your primary monitor, and then select “Primary”. When you use multiple monitors with your card, one monitor will always be Primary, and all additional monitors will be designated as Secondary.
C. Select the display icon identified by the number 2.
D. Click “Extend my Windows desktop onto this monitor”.
E. Right-click the display icon and select “Attached”, if necessary.
F. Set the “Screen Resolution” and “Color Quality” as appropriate for the second monitor. Click “Apply” or “OK” to apply these new values.
G. Repeat steps C through E for the diaplay icon identified by the number one, two, three and four.

For Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:

Right click the desktop, choose “Personalize”, and select the “Display Settings” tab so that you can adjust the parameters of the multi-monitor according to the steps below.

A. Click the number ”2” icon.
B. Click the items “This is my main monitor” and “Extend the desktop onto this monitor”.
C. Click “OK” to save your change.
D. Repeat steps A through C for the display icon identified by the number three and four.

6. Use Surround Display. Click and drag the display icons to positions representing the physical setup of your monitors that you would like to use. The placement of display icons determines how you move items from one monitor to another.

HDCP Function

HDCP function is supported on this motherboard. To use HDCP function with this motherboard, you need to adopt the monitor that supports HDCP function as well. Therefore, you can enjoy the superior display quality with high-definition HDCP encryption contents. Please refer to below instruction for more details about HDCP function.

What is HDCP?

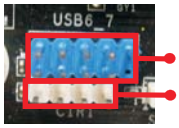
HDCP stands for High-Bandwidth Digital Content Protection, a specification developed by Intel® for protecting digital entertainment content that uses the DVI interface. HDCP is a copy protection scheme to eliminate the possibility of intercepting digital data midstream between the video source, or transmitter - such as a computer, DVD player or set-top box - and the digital display, or receiver - such as a monitor, television or projector. In other words, HDCP specification is designed to protect the integrity of content as it is being transmitted.

Products compatible with the HDCP scheme such as DVD players, satellite and cable HDTV set-top-boxes, as well as few entertainment PCs requires a secure connection to a compliant display. Due to the increase in manufacturers employing HDCP in their equipment, it is highly recommended that the HDTV or LCD monitor you purchase is compatible.

2.6 ASRock Smart Remote Installation Guide

ASRock Smart Remote is only used for ASRock motherboard with CIR header. Please refer to below procedures for the quick installation and usage of ASRock Smart Remote.

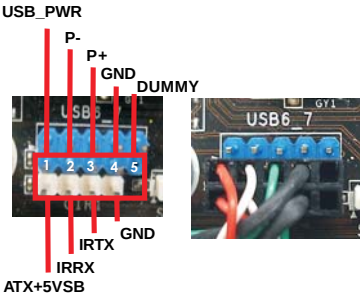
Step1. Find the CIR header located next to the USB 2.0 header on ASRock motherboard.



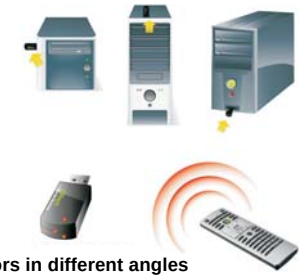
USB 2.0 header (9-pin, blue)

CIR header (4-pin, white)

Step2. Connect the front USB cable to the USB 2.0 header (as below, pin 1-5) and the CIR header. Please make sure the wire assignments and the pin assignments are matched correctly.



Step3. Install Multi-Angle CIR Receiver to the front USB port. If Multi-Angle CIR Receiver cannot successfully receive the infrared signals from MCE Remote Controller, please try to install it to the other front USB port.



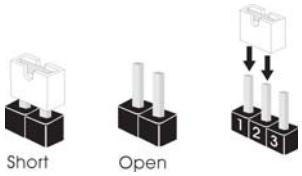
3 CIR sensors in different angles

1. Only one of the front USB port can support CIR function. When the CIR function is enabled, the other port will remain USB function.
2. Multi-Angle CIR Receiver is used for front USB only. Please do not use the rear USB bracket to connect it on the rear panel. Multi-Angle CIR Receiver can receive the multi-direction infrared signals (top, down and front), which is compatible with most of the chassis on the market.
3. The Multi-Angle CIR Receiver does not support Hot-Plug function. Please install it before you boot the system.

* ASRock Smart Remote is only supported by some of ASRock motherboards. Please refer to ASRock website for the motherboard support list: http://www.asrock.com

2.7 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is “Short”. If no jumper cap is placed on pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when jumper cap is placed on these 2 pins.



Jumper	Setting
Clear CMOS Jumper (CLRCMOS1) (see p.12, No. 24)	1_2 Default; 2_3 Clear CMOS

Note: CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.

2.8 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage of the motherboard!

Primary IDE connector (Blue)

(39-pin IDE1, see p.12 No. 8)

connect the blue end to the motherboard

connect the black end to the IDE devices

80-conductor ATA 66/100/133 cable

Note: Please refer to the instruction of your IDE device vendor for the details.

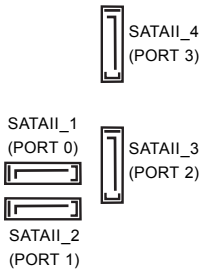
Serial ATAII Connectors

(SATAII_1 (PORT 0): see p.12, No. 15)

(SATAII_2 (PORT 1): see p.12, No. 14)

(SATAII_3 (PORT 2): see p.12, No. 13)

(SATAII_4 (PORT 3): see p.12, No. 9)



These four Serial ATAII (SATAII) connectors support SATAII or SATA hard disk for internal storage devices. The current SATAII interface allows up to 3.0 Gb/s data transfer rate.

Serial ATA3 Connectors

(SATA3_1: see p.12, No. 11)

(SATA3_2: see p.12, No. 10)

These two Serial ATA3 (SATA3) connectors support SATA data cables for internal storage devices. The current SATA3 interface allows up to 6.0 Gb/s data transfer rate.

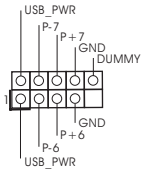
Serial ATA (SATA) Data Cable (Optional)

Either end of the SATA data cable can be connected to the SATAII / SATA3 hard disk or the SATAII / SATA3 connector on this motherboard.

USB 2.0 Headers

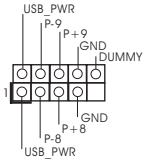
(9-pin USB6_7)

(see p.12 No. 21)



(9-pin USB8_9)

(see p.12 No. 20)

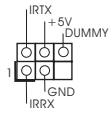


Besides four default USB 2.0 ports on the I/O panel, there are two USB 2.0 headers on this motherboard. Each USB 2.0 header can support two USB 2.0 ports.

Infrared Module Header

(5-pin IR1)

(see p.12 No. 23)

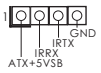


This header supports an optional wireless transmitting and receiving infrared module.

Consumer Infrared Module Header

(4-pin CIR1)

(see p.12 No. 22)

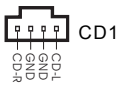


This header can be used to connect the remote controller receiver.

Internal Audio Connectors

(4-pin CD1)

(CD1: see p.12 No. 26)

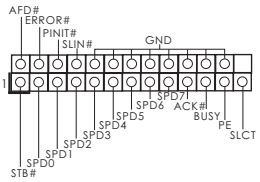


This connector allows you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.

Print Port Header

(25-pin LPT1)

(see p.12 No. 25)

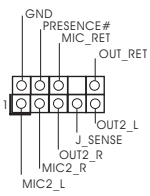


This is an interface for print port cable that allows convenient connection of printer devices.

Front Panel Audio Header

(9-pin HD_AUDIO1)

(see p.12, No. 27)



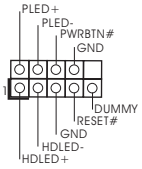
This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.

1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instruction in our manual and chassis manual to install your system.
2. If you use AC'97 audio panel, please install it to the front panel audio header as below:
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
   C. Connect Ground (GND) to Ground (GND).
   D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
   E. To activate the front mic.
   For Windows® XP / XP 64-bit OS:
   Select "Mixer". Select "Recorder". Then click "FrontMic".
   For Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:
   Go to the "FrontMic" Tab in the Realtek Control panel. Adjust "Recording Volume".

System Panel Header

(9-pin PANEL1)

(see p.12 No. 17)

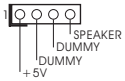


This header accommodates several system front panel functions.

Chassis Speaker Header

(4-pin SPEAKER 1)

(see p.12 No. 16)



Please connect the chassis speaker to this header.

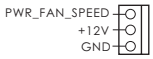
Chassis and Power Fan Connectors

(4-pin CHA_FAN1)

(see p.12 No. 18)

(3-pin PWR_FAN1)

(see p.12 No. 7)

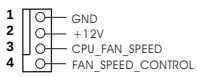


Please connect the fan cables to the fan connectors and match the black wire to the

CPU Fan Connector

(4-pin CPU_FAN1)

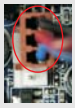
(see p.12 No. 5)



Please connect the CPU fan cable to this connector and match the black wire to the ground pin.

Though this motherboard provides 4-Pin CPU fan (Quiet Fan) support, the 3-Pin CPU fan still can work successfully even without the fan speed control function. If you plan to connect the 3-Pin CPU fan to the CPU fan connector on this motherboard, please connect it to Pin 1-3.

Pin 1-3 Connected

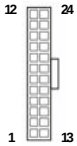


3-Pin Fan Installation

ATX Power Connector

(24-pin ATXPWR1)

(see p.12 No. 6)



Please connect an ATX power supply to this connector.

Though this motherboard provides 24-pin ATX power connector, it can still work if you adopt a traditional 20-pin ATX power supply. To use the 20-pin ATX power supply, please plug your power supply along with Pin 1 and Pin 13.

20-Pin ATX Power Supply Installation

ATX 12V Power Connector

(4-pin ATX12V1)

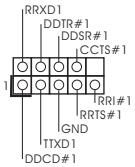
(see p.12 No. 1)

Please connect an ATX 12V power supply to this connector.

Serial port Header

(9-pin COM1)

(see p.12 No. 29)

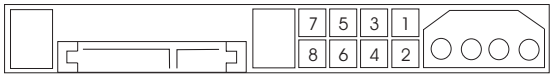


This COM1 header supports a serial port module.

2.9 SATAII Hard Disk Setup Guide

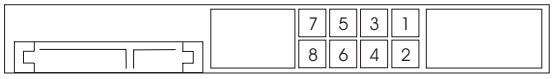
Before installing SATAII hard disk to your computer, please carefully read below SATAII hard disk setup guide. Some default setting of SATAII hard disks may not be at SATAII mode, which operate with the best performance. In order to enable SATAII function, please follow the below instruction with different vendors to correctly adjust your SATAII hard disk to SATAII mode in advance; otherwise, your SATAII hard disk may fail to run at SATAII mode.

Western Digital



If pin 5 and pin 6 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 5 and pin 6.

SAMSUNG



If pin 3 and pin 4 are shorted, SATA 1.5Gb/s will be enabled.
On the other hand, if you want to enable SATAII 3.0Gb/s, please remove the jumpers from pin 3 and pin 4.

HITACHI

Please use the Feature Tool, a DOS-bootable tool, for changing various ATA features. Please visit HITACHI's website for details:
http://www.hitachigst.com/hdd/support/download.htm

The above examples are just for your reference. For different SATAII hard disk products of different vendors, the jumper pin setting methods may not be the same. Please visit the vendors' website for the updates.

2.10 Serial ATA (SATA) / Serial ATAII (SATAII) Hard Disks Installation

This motherboard adopts AMD SB710 south bridge chipset that supports Serial ATA (SATA) / Serial ATAII (SATAII) hard disks and RAID (RAID 0, RAID 1, RAID 10 and JBOD) functions. You may install SATA / SATAII hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA / SATAII hard disks.

STEP 1: Install the SATA / SATAII hard disks into the drive bays of your chassis.
STEP 2: Connect the SATA power cable to the SATA / SATAII hard disk.
STEP 3: Connect one end of the SATA data cable to the motherboard's SATAII connector.
STEP 4: Connect the other end of the SATA data cable to the SATA / SATAII hard disk.

If you plan to use RAID 0 or RAID 1 function, you need to install at least 2 SATA / SATAII hard disks. If you plan to use RAID 10 function, you need to install 4 SATA / SATAII hard disks.

2.11 Serial ATA3 (SATA3) Hard Disks Installation

This motherboard adopts ASMedia ASM1061 chipset that supports Serial ATA3 (SATA3) hard disks. You may install SATA3 hard disks on this motherboard for internal storage devices. This section will guide you to install the SATA3 hard disks.

STEP 1: Install the SATA3 hard disks into the drive bays of your chassis.
STEP 2: Connect the SATA power cable to the SATA3 hard disk.
STEP 3: Connect one end of the SATA data cable to the motherboard's SATA3 connector.
STEP 4: Connect the other end of the SATA data cable to the SATA3 hard disk.

2.12 Hot Plug and Hot Swap Functions for SATA / SATAII HDDs

This motherboard supports Hot Plug and Hot Swap functions for SATA / SATAII Devices in RAID / AHCI mode. AMD SB710 south bridge chipset provides hardware support for Advanced Host controller Interface (AHCI), a new programming interface for SATA host controllers developed thru a joint industry effort. AHCI also provides usability enhancements such as Hot Plug.

NOTE

What is Hot Plug Function?

If the SATA / SATAII HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.
However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA / SATAII HDD.

What is Hot Swap Function?

If SATA / SATAII HDDs are built as RAID 1 then it is called "Hot Swap" for the action to insert and remove the SATA / SATAII HDDs while the system is still power-on and in working condition.

2.13 Hot Plug Function for SATA3 HDDs

This motherboard supports Hot Plug functions for SATA3 Devices in AHCI mode. ASMedia ASM1061 chipset provides hardware support for Advanced Host controller Interface (AHCI), a new programming interface for SATA host controllers developed thru a joint industry effort. AHCI also provides usability enhancements such as Hot Plug.

NOTE

What is Hot Plug Function?

If the SATA3 HDDs are NOT set for RAID configuration, it is called "Hot Plug" for the action to insert and remove the SATA3 HDDs while the system is still power-on and in working condition.
However, please note that it cannot perform Hot Plug if the OS has been installed into the SATA3 HDD.

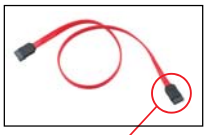
2.14 SATA / SATAII / SATA3 HDD Hot Plug Feature and Operation Guide

This motherboard supports Hot Plug feature for SATA / SATAII / SATA3 HDD in RAID / AHCI mode. Please read below operation guide of Hot Plug feature carefully. Before you process the SATA / SATAII / SATA3 HDD Hot Plug, please check below cable accessories from the motherboard gift box pack.

A. 7-pin SATA data cable

B. SATA power cable with SATA 15-pin power connector interface

A. SATA data cable (Red)



SATA 7-pin connector

B. SATA power cable

The SATA 15-pin power connector (Black) connect to SATA / SATAII / SATA3 HDD

1x4-pin conventional power connector (White) connect to power supply

Caution

1. Without SATA 15-pin power connector interface, the SATA / SATAII / SATA3 Hot Plug cannot be processed.
2. Even some SATA / SATAII / SATA3 HDDs provide both SATA 15-pin power connector and IDE 1x4-pin conventional power connector interfaces, the IDE 1x4-pin conventional power connector interface is definitely not able to support Hot Plug and will cause the HDD damage and data loss.

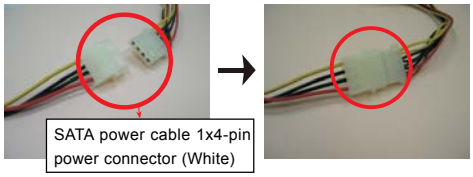
Points of attention, before you process the Hot Plug:

1. Below operation procedure is designed only for our motherboard, which supports SATA / SATAII / SATA3 HDD Hot Plug.
   * The SATA / SATAII / SATA3 Hot Plug feature might not be supported by the chipset because of its limitation, the SATA / SATAII / SATA3 Hot Plug support information of our motherboard is indicated in the product spec on our website: www.asrock.com
2. Make sure your SATA / SATAII / SATA3 HDD can support Hot Plug function from your dealer or HDD user manual. The SATA / SATAII / SATA3 HDD, which cannot support Hot Plug function, will be damaged under the Hot Plug operation.
3. Please make sure the SATA / SATAII / SATA3 driver is installed into system properly. The latest SATA / SATAII / SATA3 driver is available on our support website: www.asrock.com
4. Make sure to use the SATA power cable & data cable, which are from our motherboard package.
5. Please follow below instructions step by step to reduce the risk of HDD crash or data loss.

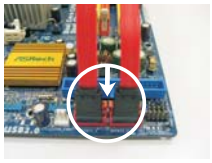
How to Hot Plug a SATA / SATAII / SATA3 HDD:

Points of attention, before you process the Hot Plug:
Please do follow below instruction sequence to process the Hot Plug, improper procedure will cause the SATA / SATAII / SATA3 HDD damage and data loss.

Step 1 Please connect SATA power cable 1x4-pin end (White) to the power supply 1x4-pin cable.



Step 2 Connect SATA data cable to the motherboard's SATAII / SATA3 connector.



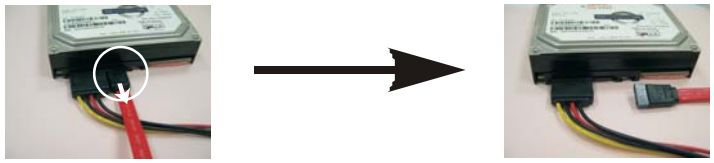
Step 3 Connect SATA 15-pin power cable connector (Black) end to SATA / SATAII / SATA3 HDD.

Step 4 Connect SATA data cable to the SATA / SATAII / SATA3 HDD.

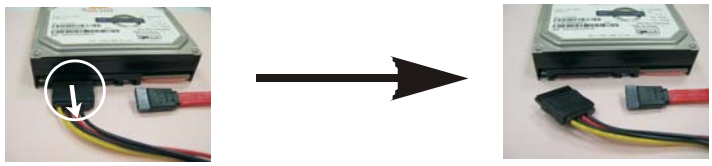
How to Hot Unplug a SATA / SATAII / SATA3 HDD:

Points of attention, before you process the Hot Unplug:
Please do follow below instruction sequence to process the Hot Unplug, improper procedure will cause the SATA / SATAII / SATA3 HDD damage and data loss.

Step 1 Unplug SATA data cable from SATA / SATAII / SATA3 HDD side.



Step 2 Unplug SATA 15-pin power cable connector (Black) from SATA / SATAII / SATA3 HDD side.



2.15 Driver Installation Guide

To install the drivers to your system, please insert the support CD to your optical drive first. Then, the drivers compatible to your system can be auto-detected and listed on the support CD driver page. Please follow the order from up to bottom side to install those required drivers. Therefore, the drivers you install can work properly.

2.16 Installing Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit With RAID Functions

If you want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit on a RAID disk composed of 2 or more SATA / SATA2 HDDs with RAID functions, please follow below procedures according to the OS you install.

2.16.1 Installing Windows® XP / XP 64-bit With RAID Functions

If you want to install Windows® XP / XP 64-bit on a RAID disk composed of 2 or more SATA / SATA2 HDDs with RAID functions, please follow below steps.

STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.

B. Set the "SATA Operation Mode" option to [RAID] for SATAII_1 to SATAII_4 ports.

STEP 2: Make a SATA / SATA2 Driver Diskette. (Please use a USB floppy or floppy disk.)

A. Insert the ASRock Support CD into your optical drive to boot your system.

B. During POST at the beginning of system boot-up, press <F11> key, and then a window for boot devices selection appears. Please select CD-ROM as the boot device.

C. When you see the message on the screen, "Generate Serial ATA driver diskette [YN]?", press <Y>.

D. Then you will see these messages,

Please insert a blank
formatted diskette into floppy
drive A:
press any key to start

Please insert a floppy diskette into the floppy drive, and press any key.

E. The system will start to format the floppy diskette and copy SATA / SATA2 drivers into the floppy diskette.

STEP 3: Use "RAID Installation Guide" to set RAID configuration.
Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide part of the document in the following path in the Support CD:
.. \ RAID Installation Guide
STEP 4: Install Windows® XP / XP 64-bit OS on your system.
After step 1, 2, 3, you can start to install Windows® XP / XP 64-bit OS on your system. At the beginning of Windows® setup, press F6 to install a third-party RAID driver. When prompted, insert the SATA / SATA2 driver diskette containing the AMD RAID driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the OS you install. (Select "AMD AHCI Compatible RAID Controller-x86 platform" for Windows® XP, or "AMD AHCI Compatible RAID Controller-x64 platform" for Windows® XP 64-bit.)

NOTE. If you install Windows® XP / XP 64-bit on IDE HDDs and want to manage (create, convert, delete, or rebuild) RAID functions on SATA / SATA2 HDDs, you still need to set up "SATA Operation Mode" to [RAID] first. Then, please set the RAID configuration by using the Windows RAID installation guide in the following path in the Support CD: **.. \ RAID Installation Guide**

2.16.2 Installing Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit With RAID Functions

If you want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit on a RAID disk composed of 2 or more SATA / SATA2 HDDs with RAID functions, please follow below steps.

STEP 1: Set up BIOS.
A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.
B. Set the "SATA Operation Mode" option to [RAID] for SATAII_1 to SATAII_4 ports.
STEP 2: Use "RAID Installation Guide" to set RAID configuration.
Before you start to configure RAID function, you need to check the RAID installation guide in the Support CD for proper configuration. Please refer to the BIOS RAID installation guide part of the document in the following path in the Support CD:
.. \ RAID Installation Guide
STEP 3: Install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system.

NOTE1. If you install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit on IDE HDDs and want to manage (create, convert, delete, or rebuild) RAID functions on SATA / SATA2 HDDs, you still need to set up "SATA Operation Mode" to [RAID] in BIOS first. Then, please set the RAID configuration by using the Windows RAID installation guide in the following path in the Support CD:
.. \ RAID Installation Guide

NOTE2. Currently, if you install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit on IDE HDDs and there are no SATA / SATA2 device used, please set up "SATA Operation Mode" to [IDE] in BIOS.

2.17 Installing Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit Without RAID Functions

If you want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit OS on your SATA / SATA2 / SATA3 HDDs without RAID functions, please follow below procedures according to the OS you install.

2.17.1 Installing Windows® XP / XP 64-bit Without RAID Functions

If you want to install Windows® XP / XP 64-bit on your SATA / SATA2 / SATA3 HDDs without RAID functions, please follow below steps.

Using SATA / SATA2/ SATA3 HDDs with NCQ and Hot Plug functions (AHCI mode)

STEP 1: Set Up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.

B. Set the "SATA Operation Mode" option to [AHCI] for SATAII_1 to SATAII_4 ports.
Set the "Onboard SATA3 Operation Mode" option to [AHCI] for SATA3_1 and SATA3_2 ports.

STEP 4: Install Windows® XP / XP 64-bit OS on your system.

You can start to install Windows® XP / XP 64-bit OS on your system. At the beginning of Windows® setup, press F6 to install a third-party AHCI driver. When prompted, insert the SATA2 / SATA3 driver diskette containing the AMD AHCI driver. After reading the floppy disk, the driver will be presented. Select the driver to install according to the OS you install. (Select "AMD AHCI Compatible RAID Controller-x86 platform" for Windows® XP, or "AMD AHCI Compatible RAID Controller-x64 platform" for Windows® XP 64-bit.)

Using SATA / SATA2 / SATA3 HDDs without NCQ and Hot Plug functions (IDE mode)

STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen→ Storage Configuration.

B. Set the "SATA Operation Mode" option to [IDE] for SATAII_1 to SATAII_4 ports. Set the "Onboard SATA3 Operation Mode" option to [IDE] for SATA3_1 and SATA3_2 ports.

STEP 2: Install Windows® XP / XP 64-bit OS on your system.

2.17.2 Installing Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit Without RAID Functions

If you want to install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit on your SATA / SATA2 / SATA3 HDDs without RAID functions, please follow below steps.

Using SATA / SATA2 / SATA3 HDDs with NCQ and Hot Plug functions (AHCI mode)

STEP 1: Set Up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.

B. Set the "SATA Operation Mode" option to [AHCI] for SATAII_1 to SATAII_4 ports.
Set the "Onboard SATA3 Operation Mode" option to [AHCI] for SATA3_1 and SATA3_2 ports.

STEP 2: Install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system.

Using SATA / SATA2 / SATA3 HDDs without NCQ and Hot Plug functions (IDE mode)

STEP 1: Set up BIOS.

A. Enter BIOS SETUP UTILITY → Advanced screen → Storage Configuration.

B. Set the "SATA Operation Mode" option to [IDE] for SATAII_1 to SATAII_4 ports. Set the "Onboard SATA3 Operation Mode" option to [IDE] for SATA3_1 and SATA3_2 ports.

STEP 2: Install Windows® 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS on your system.

2.18 Untied Overclocking Technology

This motherboard supports Untied Overclocking Technology, which means during overclocking, FSB enjoys better margin due to fixed PCI / PCIE buses. Before you enable Untied Overclocking function, please enter “Overclock Mode” option of BIOS setup to set the selection from [Auto] to [Manual]. Therefore, CPU FSB is untied during overclocking, but PCI / PCIE buses are in the fixed mode so that FSB can operate under a more stable overclocking environment.

Please refer to the warning on page 8 for the possible overclocking risk before you apply Untied Overclocking Technology.

3. BIOS SETUP UTILITY

3.1 Introduction

This section explains how to use the BIOS SETUP UTILITY to configure your system. The SPI Memory on the motherboard stores the BIOS SETUP UTILITY. You may run the BIOS SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the BIOS SETUP UTILITY, otherwise, POST will continue with its test routines.

If you wish to enter the BIOS SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the BIOS software is constantly being updated, the following BIOS setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

3.1.1 BIOS Menu Bar

The top of the screen has a menu bar with the following selections:

Main	To set up the system time/date information
OC Tweaker	To set up overclocking features
Advanced	To set up the advanced BIOS features
H/W Monitor	To display current hardware status
Boot	To set up the default system device to locate and load the Operating System
Security	To set up the security features
Exit	To exit the current screen or the BIOS SETUP UTILITY

Use < ← > key or < → > key to choose among the selections on the menu bar, and then press <Enter> to get into the sub screen.

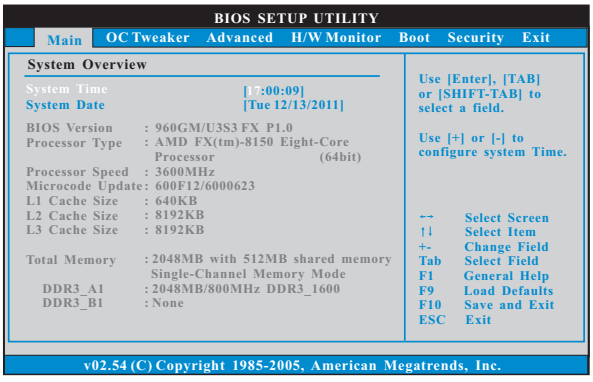
3.1.2 Navigation Keys

Please check the following table for the function description of each navigation key.

Navigation Key(s)	Function Description
← / →	Moves cursor left or right to select Screens
↑ / ↓	Moves cursor up or down to select items
+ / -	To change option for the selected items
<Enter>	To bring up the selected screen
<F1>	To display the General Help Screen
<F9>	To load optimal default values for all the settings
<F10>	To save changes and exit the BIOS SETUP UTILITY
<ESC>	To jump to the Exit Screen or exit the current screen

3.2 Main Screen

When you enter the BIOS SETUP UTILITY, the Main screen will appear and display the system overview.



System Time [Hour:Minute:Second]

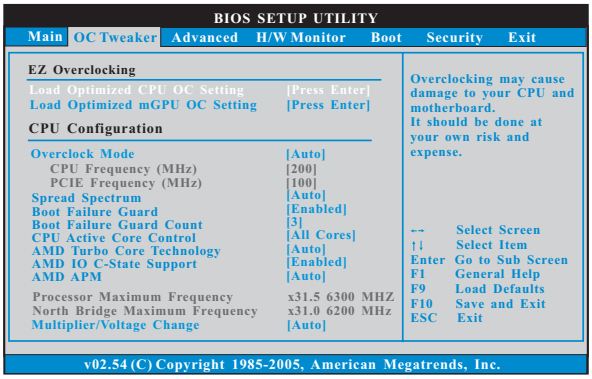
Use this item to specify the system time.

System Date [Day Month/Date/Year]

Use this item to specify the system date.

3.3 OC Tweaker Screen

In the OC Tweaker screen, you can set up overclocking features.


BIOS SETUP UTILITY
Main OC Tweaker Advanced H/W Monitor Boot Security Exit
EZ Overclocking
Load Optimized CPU OC Setting [Press Enter]
Load Optimized mGPU OC Setting [Press Enter]
CPU Configuration
Overclock Mode [Auto]
CPU Frequency (MHz) [200]
PCIE Frequency (MHz) [100]
Spread Spectrum [Auto]
Boot Failure Guard [Enabled]
Boot Failure Guard Count [3]
CPU Active Core Control [All Cores]
AMD Turbo Core Technology [Auto]
AMD IO C-State Support [Enabled]
AMD APM [Auto]
Processor Maximum Frequency x31.5 6300 MHZ
North Bridge Maximum Frequency x31.0 6200 MHz
Multiplier/Voltage Change [Auto]
Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.
↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
v02.54 (C) Copyright 1985-2005, American Megatrends, Inc.

EZ Overclocking

Load Optimized CPU OC Setting

You can use this option to load the optiomized CPU overclocking setting. Please note that overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.

Load Optimized mGPU OC Setting

You can use this option to load mGPU overclocking setting. Please note that overclocing may cause damage to your mGPU and motherboard. It should be done at your own risk and expense.

CPU Configuration

Overclock Mode

Use this to select Overclock Mode. The default value is [Auto]. Configuration options: [Auto] and [Manual].

CPU Frequency (MHz)

Use this option to adjust CPU frequency.

PCIE Frequency (MHz)

Use this option to adjust PCIE frequency.

Spread Spectrum

This item should always be [Auto] for better system stability.

Boot Failure Guard

Enable or disable the feature of Boot Failure Guard.

Boot Failure Guard Count

Enable or disable the feature of Boot Failure Guard Count.

CPU Active Core Control

This allows you to adjust CPU Active Core Control feature. The configuration options depend on the CPU core you adopt. The default value is [All Cores].

AMD Turbo Core Technology

This item appears only when the processor you adopt supports this feature. Use this to select enable or disable AMD Turbo Core Technology. Confi guration options: [Auto] and [Disabled]. The default value is [Auto].

AMD IO C-State Support

This allows you to enable or disable AMD IO C-State Support. The default value is [Enabled].

AMD APM

Application Power Management (APM) allows the processor to deterministically provide maximum performance while remaining within the specified power delivery and removal envelope. APM dynamically monitors core activity and generates an approximation of power consumption.When manually adjust the CPU Multiplier/Voltage, APM status will automatically be set to disable. APM is capable of being manually set enable if users still need this function. The default value is [Auto].

Processor Maximum Frequency

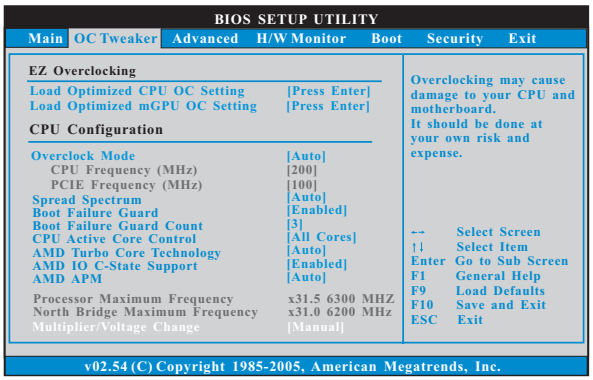
It will display Processor Maximum Frequency for reference.

North Bridge Maximum Frequency

It will display North Bridge Maximum Frequency for reference.

Multiplier/Voltage Change

This item is set to [Auto] by default. If it is set to [Manual], you may adjust the value of Processor Frequency and Processor Voltage. However, it is recommended to keep the default value for system stability.


BIOS SETUP UTILITY
Main OC Tweaker Advanced H/W Monitor Boot Security Exit
EZ Overclocking
Load Optimized CPU OC Setting [Press Enter]
Load Optimized mGPU OC Setting [Press Enter]
CPU Configuration
Overclock Mode [Auto]
CPU Frequency (MHz) [200]
PCIE Frequency (MHz) [100]
Spread Spectrum [Auto]
Boot Failure Guard [Enabled]
Boot Failure Guard Count [3]
CPU Active Core Control [All Cores]
AMD Turbo Core Technology [Auto]
AMD IO C-State Support [Enabled]
AMD APM [Auto]
Processor Maximum Frequency x31.5 6300 MHZ
North Bridge Maximum Frequency x31.0 6200 MHz
Multiplier/Voltage Change [Manual]
Overclocking may cause damage to your CPU and motherboard. It should be done at your own risk and expense.
↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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CPU Frequency Multiplier

For safety and system stability, it is not recommended to adjust the value of this item.

CPU Voltage

It allows you to adjust the value of CPU voltage. However, for safety and system stability, it is not recommended to adjust the value of this item.

NB Frequency Multiplier

For safety and system stability, it is not recommended to adjust the value of this item.

CPU NB Voltage

It allows you to adjust the value of CPU NB voltage. However, for safety and system stability, it is not recommended to adjust the value of this item.

HT Bus Speed

This feature allows you selecting Hyper-Transport bus speed. Configuration options: [Auto], [x1 200MHz] to [x11 2200MHz].

HT Bus Width

This feature allows you selecting Hyper-Transport bus width. Configuraion options: [Auto], [8 Bit] and [16 Bit].

Memory Configuration

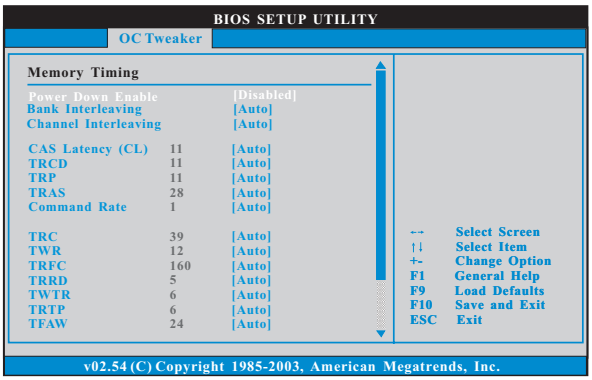
Memory Clock

This item can be set by the code using [Auto]. You can set one of the standard values as listed: [400MHz DDR3_800], [533MHz DDR3_1066], [667MHz DDR3_1333], [800MHz DDR3_1600] and [933MHz DDR3_1866].

DRAM Voltage

Use this to select DRAM voltage. The default value is [Auto].

Memory Timing



Power Down Enable

Use this item to enable or disable DDR power down mode.

Bank Interleaving

Interleaving allows memory accesses to be spread out over banks on the same node, or accross nodes, decreasing access contention.

Channel Interleaving

It allows you to enable Channel Memory Interleaving. The default value is [Auto].

CAS Latency (CL)

Use this item to adjust the means of memory accessing. The default value is [Auto].

TRCD

Use this to adjust TRCD values. The default value is [Auto].

TRP

Use this to adjust TRP values. The default value is [Auto].

TRAS

Use this to adjust TRAS values. The default value is [Auto].

Command Rate

Use this item to change Command Rate Auto/Manual setting. Min: 1N. Max: 2N. The default is [Auto].

TRC

Use this to adjust TRC values. The default value is [Auto].

TWR

Use this to adjust TWR values. The default value is [Auto].

TRFC

Use this to adjust TRFC values. The default value is [Auto].

TRRD

Use this to adjust TRRD values. The default value is [Auto].

TWTR

Use this to adjust TWTR values. The default value is [Auto].

TRTP

Use this to adjust TRTP values. The default value is [Auto].

TFAW

Use this to adjust TFAW values. The default value is [Auto].

Chipset Settings

Onboard GPU Clock Override

This allows you to enable or disable the Onboard GPU Clock Override feature.

Onboard GPU Clock

This option only appears when you enable “Onboard GPU Clock Override”. The default value is [500].

mGPU Voltage

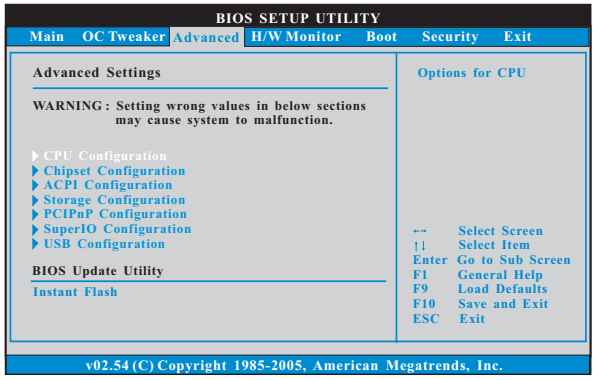
Use this to select mGPU voltage. The default value is [Auto].

Would you like to save current setting user defaults?

In this option, you are allowed to load and save three user defaults according to your own requirements.

3.4 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Chipset Configuration, ACPI Configuration, Storage Configuration, PCIPnP Configuration, SuperIO Configuration, and USB Configuration.

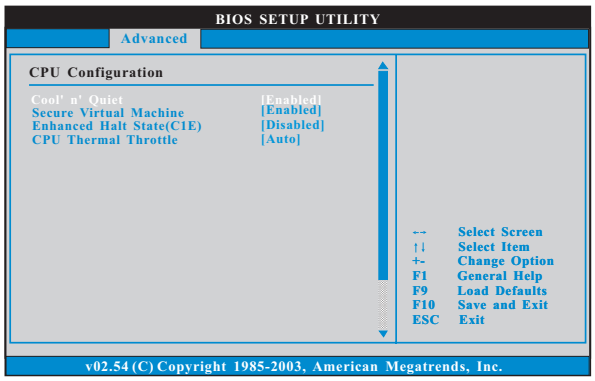


Setting wrong values in this section may cause the system to malfunction.

Instant Flash

Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system. If you execute Instant Flash utility, the utility will show the BIOS files and their respective information. Select the proper BIOS file to update your BIOS, and reboot your system after BIOS update process completes.

3.4.1 CPU Configuration



Cool 'n' Quiet

Use this item to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Enabled]. Configuration options: [Auto], [Enabled] and [Disabled]. If you install Windows® 7 / Vista™ and want to enable this function, please set this item to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issue with some memory modules or power supplies. Please set this item to [Disable] if above issue occurs.

Secure Virtual Machine

When this option is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled].

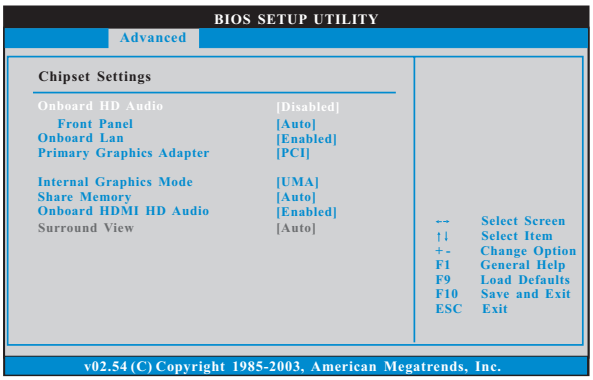
Enhance Halt State (C1E)

All processors support the Halt State (C1). The C1 state is supported through the native processor instructions HLT and MWAIT and requires no hardware support from the chipset. In the C1 power state, the processor maintains the context of the system caches.

CPU Thermal Throttle

Use this item to enable CPU internal thermal control mechanism to keep the CPU from overheated. The default value is [Auto].

3.4.2 Chipset Configuration



Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio feature. If you select [Auto], the onboard HD Audio will be disabled when PCI Sound Card is plugged.

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

Onboard Lan

This allows you to enable or disable the onboard Lan feature.

Primary Graphics Adapter

This item will switch the PCI Bus scanning order while searching for video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value of this feature is [PCI]. Configuration options: [PCI], [Onboard] and [PCI Express].

Internal Graphics Mode

This allows you to adjust internal graphics mode. The default value is [UMA]. Configuration options: [UMA] and [Disabled].

Share Memory

This allows you to set share memory feature. The default value is [Auto]. Configuration options: [Auto], [32MB], [64MB], [128MB], [256MB] and [512MB]. This option only appears when you set “Internal Graphics Mode” to [UMA].

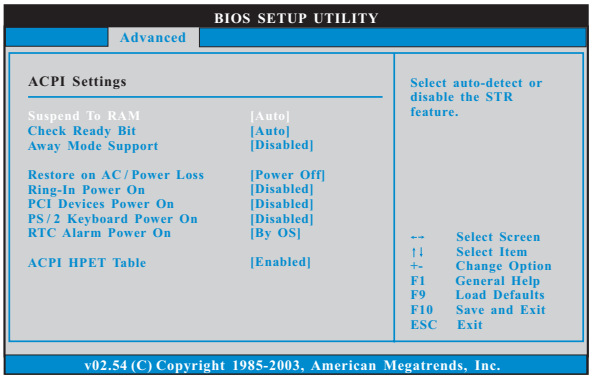
Onboard HDMI HD Audio

This allows you to enable or disable the onboard HDMI HD Audio in AMD 760G.

Surround View

This allows you to enable or disable the Surround View feature.

3.4.3 ACPI Configuration


BIOS SETUP UTILITY
Advanced
ACPI Settings
Suspend To RAM [Auto]
Check Ready Bit [Auto]
Away Mode Support [Disabled]
Restore on AC/Power Loss [Power Off]
Ring-In Power On [Disabled]
PCI Devices Power On [Disabled]
PS/2 Keyboard Power On [Disabled]
RTC Alarm Power On [By OS]
ACPI HPET Table [Enabled]
Select auto-detect or disable the STR feature.
↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Suspend to RAM

Use this item to select whether to auto-detect or disable the Suspend-to-RAM feature. Select [Auto] will enable this feature if the OS supports it.

Check Ready Bit

Use this item to enable or disable the feature Check Ready Bit.

Away Mode Support

Use this item to enable or disable Away Mode support under Windows® XP Media Center OS. The default value is [Disabled].

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

Ring-In Power On

Use this item to enable or disable Ring-In signals to turn on the system from the power-soft-off mode.

PCI Devices Power On

Use this item to enable or disable PCI devices to turn on the system from the power-soft-off mode.

PS/2 Keyboard Power On

Use this item to enable or disable PS/2 keyboard to turn on the system from the power-soft-off mode.

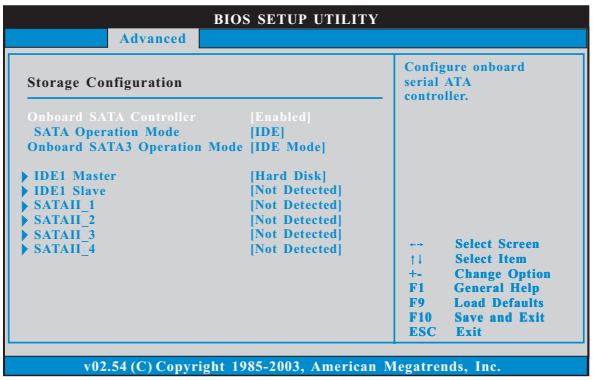
RTC Alarm Power On

Use this item to enable or disable RTC (Real Time Clock) to power on the system.

ACPI HPET Table

Use this item to enable or disable ACPI HPET Table. The default value is [Disabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® Vista™ certification.

3.4.4 Storage Configuration



Onboard SATA Controller

Use this item to enable or disable the "Onboard SATA Controller" feature.

SATA Operation Mode

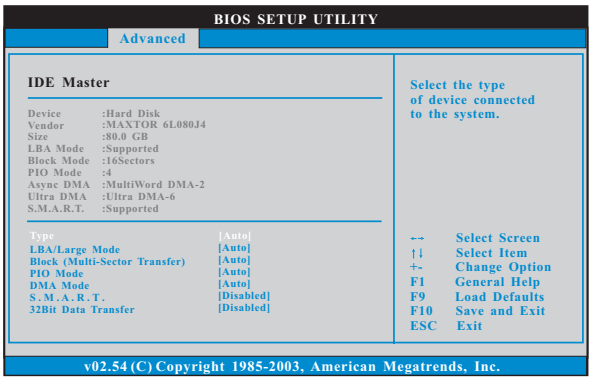
Use this item to adjust SATA Operation Mode. The default value of this option is [IDE]. If you want to operate RAID function on SATA / SATA2 HDDs, please select [RAID]. Configuration options: [IDE], [RAID] and [AHCI].

Onboard SATA3 Operation Mode

Use this item to adjust SATA3 Operation Mode. The default value of this option is [IDE Mode]. Configuration options: [IDE Mode], [AHCI Mode] and [Disabled].

IDE Device Configuration

You may set the IDE configuration for the device that you specify. We will use the "IDE1 Master" as the example in the following instruction, which can be applied to the configurations of "IDE1 Slave" as well.



TYPE

Use this item to configure the type of the IDE device that you specify. Configuration options: [Not Installed], [Auto], [CD/DVD], and [ARMD].

[Not Installed]: Select [Not Installed] to disable the use of IDE device.

[Auto]: Select [Auto] to automatically detect the hard disk drive.

After selecting the hard disk information into BIOS, use a disk utility, such as FDISK, to partition and format the new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Make sure to set the partition of the Primary IDE hard disk drives to active.

[CD/DVD]: This is used for IDE CD/DVD drives.

[ARMD]: This is used for IDE ARMD (ATAPI Removable Media Device), such as MO.

LBA/Large Mode

Use this item to select the LBA/Large mode for a hard disk > 512 MB under DOS and Windows; for Netware and UNIX user, select [Disabled] to disable the LBA/Large mode.

Block (Multi-Sector Transfer)

The default value of this item is [Auto]. If this feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode

DMA capability allows the improved transfer-speed and data-integrity for compatible IDE devices.

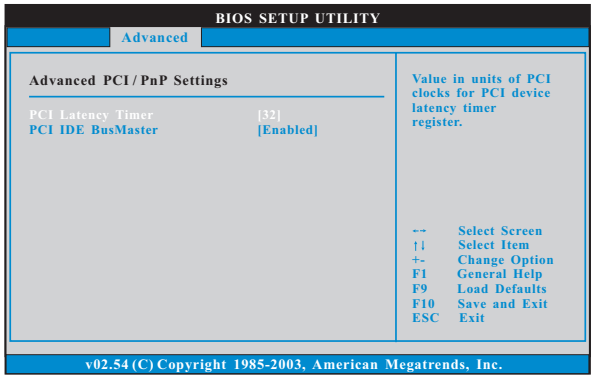
S.M.A.R.T.

Use this item to enable or disable the S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology) feature. Configuration options: [Disabled], [Auto], [Enabled].

32Bit Data Transfer

Use this item to enable 32-bit access to maximize the IDE hard disk data transfer rate.

3.4.5 PCIPnP Configuration


BIOS SETUP UTILITY
Advanced
Advanced PCI / PnP Settings
PCI Latency Timer [32]
PCI IDE BusMaster [Enabled]
Value in units of PCI clocks for PCI device latency timer register.
←→ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Setting wrong values in this section may cause the system to malfunction.

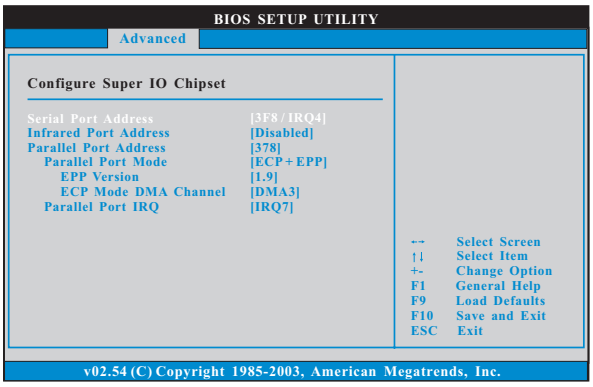
PCI Latency Timer

The default value is 32. It is recommended to keep the default value unless the installed PCI expansion cards' specifications require other settings.

PCI IDE BusMaster

Use this item to enable or disable the PCI IDE BusMaster feature.

3.4.6Super IO Configuration



Serial Port Address

Use this item to set the address for the onboard serial port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4] and [2E8 / IRQ3].

Infrared Port Address

Use this item to set the address for the onboard infrared port or disable it. Configuration options: [Disabled], [3F8 / IRQ4], [2F8 / IRQ3], [3E8 / IRQ4] and [2E8 / IRQ3].

Parallel Port Address

Use this item to set the address for the onboard parallel port or disable it. Configuration options: [Disabled], [378] and [278].

Parallel Port Mode

Use this item to set the operation mode of the parallel port. The default value is [ECP+EPP]. If this option is set to [ECP+EPP], it will show the EPP version in the following item, “EPP Version”. Configuration options: [Normal], [Bi-Directional] and [ECP+EPP].

EPP Version

Use this item to set the EPP version. Configuration options: [1.9] and [1.7].

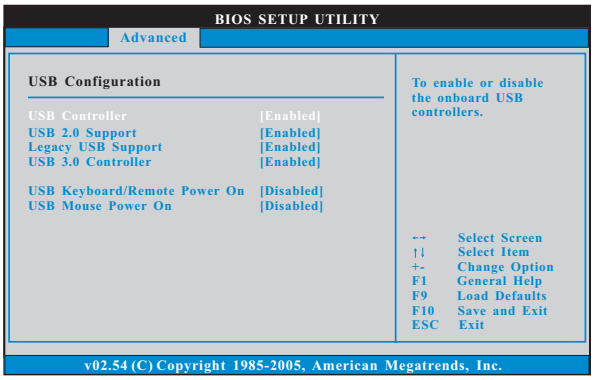
ECP Mode DMA Channel

Use this item to set the ECP mode DMA channel. Configuration options: [DMA0], [DMA1] and [DMA3].

Parallel Port IRQ

Use this item to set the IRQ for the parallel port. Configuration options: [IRQ5] and [IRQ7].

3.4.7 USB Configuration



USB Controller

Use this item to enable or disable the use of USB controller.

USB 2.0 Support

Use this item to enable or disable the USB 2.0 support.

Legacy USB Support

Use this option to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [BIOS Setup Only]. The default value is [Enabled]. Please refer to below descriptions for the details of these four options:

[Enabled] - Enables support for legacy USB.

[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to use under legacy OS and BIOS setup when [Disabled] is selected. If you have USB compatibility issue, it is recommended to select [Disabled] to enter OS.

[BIOS Setup Only] - USB devices are allowed to use only under BIOS setup and Windows / Linux OS.

USB 3.0 Controller

Use this item to enable or disable the use of USB 3.0 controller.

USB Keyboard/Remote Power On

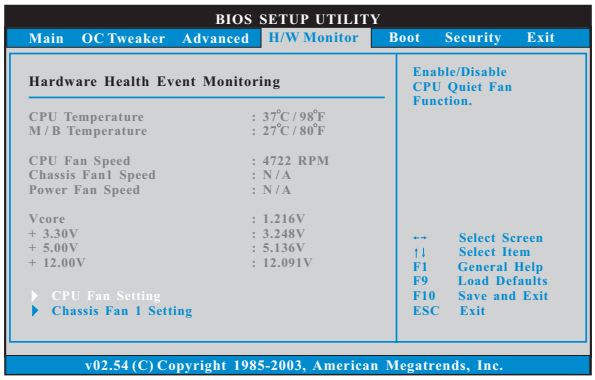
Use this item to enable or disable USB Keyboard/Remote Power On on the system.

USB Mouse Power On

Use this item to enable or disable USB Mouse Power On on the system.

3.5 Hardware Health Event Monitoring Screen

In this section, it allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, CPU fan speed, chassis fan speed, and the critical voltage.


BIOS SETUP UTILITY
Main OC Tweaker Advanced H/W Monitor Boot Security Exit
Hardware Health Event Monitoring
CPU Temperature : 37°C / 98°F
M / B Temperature : 27°C / 80°F
CPU Fan Speed : 4722 RPM
Chassis Fan1 Speed : N / A
Power Fan Speed : N / A
Vcore : 1.216V
+ 3.30V : 3.248V
+ 5.00V : 5.136V
+ 12.00V : 12.091V
CPU Fan Setting
Chassis Fan 1 Setting
Enable/Disable CPU Quiet Fan Function.
↔ Select Screen
↑↓ Select Item
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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CPU Fan Setting

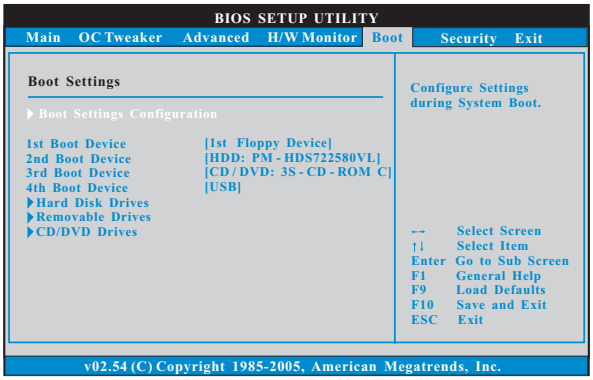
This allows you to set the CPU fan speed. Configuration options: [Full On] and [Automatic mode]. The default is value [Full On].

Chassis Fan 1 Setting

This allows you to set the chassis fan 1 speed. Configuration options: [Full On] and [Manual Mode]. The default is value [Full On].

3.6 Boot Screen

In this section, it will display the available devices on your system for you to configure the boot settings and the boot priority.


BIOS SETUP UTILITY
Main OC Tweaker Advanced H/W Monitor Boot Security Exit
Boot Settings
Boot Settings Configuration
1st Boot Device [1st Floppy Device]
2nd Boot Device [HDD: PM - HDS722580VL]
3rd Boot Device [CD/DVD: 3S - CD - ROM C]
4th Boot Device [USB]
Hard Disk Drives
Removable Drives
CD/DVD Drives
Configure Settings during System Boot.
↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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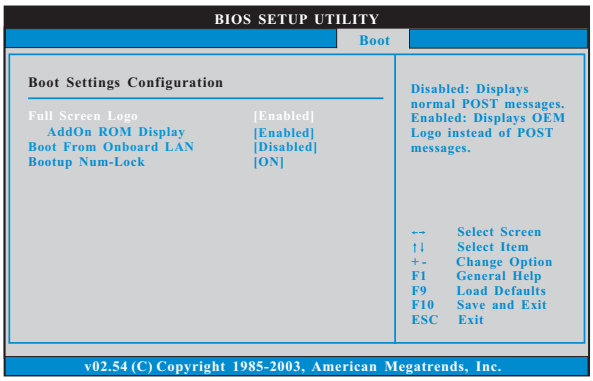
3.6.1 Boot Settings Configuration


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Full Screen Logo [Enabled]
AddOn ROM Display [Enabled]
Boot From Onboard LAN [Disabled]
Bootup Num-Lock [ON]
Disabled: Displays normal POST messages. Enabled: Displays OEM Logo instead of POST messages.
↔ Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Full Screen Logo

Use this item to enable or disable OEM Logo. The default value is [Enabled].

AddOn ROM Display

Use this option to adjust AddOn ROM Display. If you enable the option "Full Screen Logo" but you want to see the AddOn ROM information when the system boots, please select [Enabled]. Configuration options: [Enabled] and [Disabled]. The default value is [Enabled].

Boot From Onboard LAN

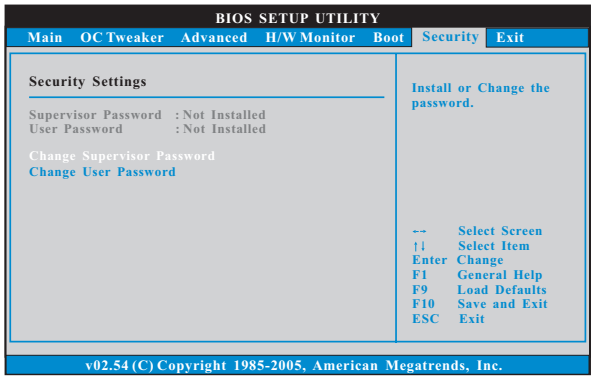
Use this item to enable or disable the Boot From Onboard LAN feature.

Boot Up Num-Lock

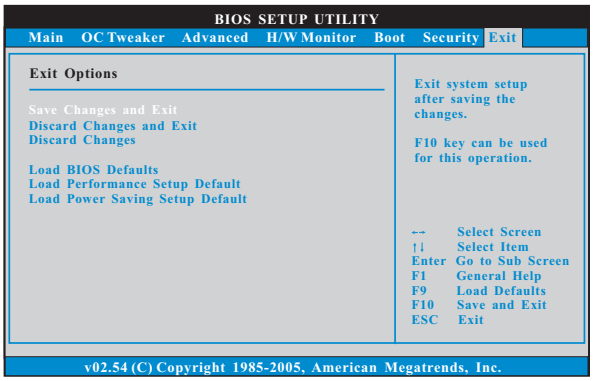
If this item is set to [On], it will automatically activate the Numeric Lock function after boot-up.

3.7 Security Screen

In this section, you may set or change the supervisor/user password for the system. For the user password, you may also clear it.



3.8 Exit Screen


BIOS SETUP UTILITY
Main OC Tweaker Advanced H/W Monitor Boot Security Exit
Exit Options
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load BIOS Defaults
Load Performance Setup Default
Load Power Saving Setup Default
Exit system setup after saving the changes.
F10 key can be used for this operation.
↔ Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F9 Load Defaults
F10 Save and Exit
ESC Exit
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Save Changes and Exit

When you select this option, it will pop-out the following message, "Save configuration changes and exit setup?" Select [OK] to save the changes and exit the BIOS SETUP UTILITY.

Discard Changes and Exit

When you select this option, it will pop-out the following message, "Discard changes and exit setup?" Select [OK] to exit the BIOS SETUP UTILITY without saving any changes.

Discard Changes

When you select this option, it will pop-out the following message, "Discard changes?" Select [OK] to discard all changes.

Load BIOS Defaults

Load BIOS default values for all the setup questions. F9 key can be used for this operation.

Load Performance Setup Default

This performance setup default may not be compatible with all system configurations. If system boot failure occurs after loading, please resume optimal default settings. F5 key can be used for this operation.

Load Power Saving Setup Default

Load power saving setup default. F6 key can be used for this operation.

4. Software Support

4.1 Install Operating System

This motherboard supports various Microsoft® Windows® operating systems: 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP Media Center / XP 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer to your OS documentation for more information.

4.2 Support CD Information

The Support CD that came with the motherboard contains necessary drivers and useful utilities that enhance the motherboard features.

4.2.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu did not appear automatically, locate and double click on the file "ASSETUP.EXE" from the BIN folder in the Support CD to display the menus.

4.2.2 Drivers Menu

The Drivers Menu shows the available devices drivers if the system detects the installed devices. Please install the necessary drivers to activate the devices.

4.2.3 Utilities Menu

The Utilities Menu shows the applications software that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

4.2.4 Contact Information

If you need to contact ASRock or want to know more about ASRock, welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.